

NIGHT FIGHTER

High over England the challenge of night bombing is being answered by specialized night flighter airplanes. One of the most effective of these has been the Have I, which packs speed, maneuverability, and devastating fire. This model of the famous Douglas DB-7 gets its power and speed from two dependable Trim Wass pengines.

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THOMSTON PROBUCTS, INC.

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AVIATION December 17



A Civil Guard of the Air!

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AVIAVION, Security, 1907



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ANNUAL MAINTENANCE ISSUE

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Maintenance on the More Mon on the Ground of Humilton Field Corpus Christs Irital) Santon Turne State American Avenut Light Plans Majetenance By Donald C Deliver

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Air Policy and Defense

Highlights on some of the problems associated with the operation of American places in worders Vice Chairman, Cird. Assanguists Sound, John Technical, Assangt to W. Assant Harrison on British Mission.

Ry Edward Worser

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AVIATION, December, 200

Quick Turn-Around

Pon American Airways has maintenance bases at Marsi. Big. Repwaeville, San Francisco, Seattle, and New York-plue new shops being set up in Africa. Topyronk maintenance can be found at any of these places. Aviation's Maintenance Award is presented to all of the 2.500 mechanics and supervisors afona these for flung routes. Each show in its turn how had to do its cam pioneering. The following propert of pointenance wethods being used on the North Atlantic service is truical of the originality and skill being used on all Pan American routes. It concludes a series of three articles on trans-oceanic merations.

Ry Edward W. McVitty Dweller Engineer Affonts Dwagen Fox American Airway Switzen

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Northwest Airlines Wins Aviation's

Maintenance Award for line flying less than 100,000,000 revenue passenger miles per year.



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Air Corps Learned Plenty ON MANEUVERS **But Did the Ground Troops?** nobile flat forces were the 200 pursuit.



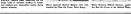


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The War and Aircraft

The head of Lockheed's world-wide service commission rewords some of the lessons his firm how leavened from the some

By Reagan C. Stunkel, Contoner Service Manager, Leckhard Aircraft Corporation

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Keep 'Em Flying—Abroad

Acceptance of American nimbons cleaned depends not only on the quality and performance of individual types. Snother important factor too featurably neglected in the past, is the adequate supervision of maintenance service.

By Arthur L. Forgetf, Service Monoger, Self-Aircraft Co.

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Maintenance on the Move The Air Cores has new equipment and methods for servicing combat planes in the field.

MAINTENANCE in soders mar









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Men On The Ground

Maintenance men of the Air Corps are doing a vitally important job at every training and tactical field in the country. Work at Hamilton Field, California, is representative of that done at most of the larger nursuit fields where Bose Engineering Officers are stationed.



Official V. S. Air Cours plants for 49th All Stee Price Cardian

NLY a plot appreciates good main-





at Hamilton Field



Atla parises wheters and other switches







Corpus Christi

At its new Air Station in Texas the Navy has built a great, speawling city of barracks, hungars and flying fields. In these two pages of photographs are shown some of the maintenance activities that keep Navy cityshases flying.

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But the borely do full the tenks do roll, the bullets do fiv-and in such a world our only shield seems to be more bombs of our own with hombers to corry there, more tonks and the cannon to arm them. more builets and faster guns to fire

So it is that from Goodyear factories mount for building things to enlarge life and make it better, new most flow in a swelling tide the things our country prode if forms on the making of harryer. belloom, bomber vings and tails, bullet-ounetwo-realing inner tubes and fael traks, res marks. fense products. This is no choice of ours - like amount or would for oother

Skills and facilities developed that

a personful world reight how better

where life out he righer, liberty enjoyed, where the pursuit of happiness can go steadily on.

for impromulate defense of such things, or running the risk of

boving them event over, there is go option and we feel as we know intend to do our part to hold.

Compared with holding it, what

TEMERE is the right of a man to stend on his own two feet, and with his own hands and talents corve and a place for himself and his family. There is the right of a vomen to look hapefully about, to raise up her brood in dignity and self-re-

mother-window and conscience. and out of it all searchov shaping There is the right of a how to lead the hale, free life of boys, flying kites when the wind blows, playing roos and robbers when he wants

a fature to a cond nattern. There is the right of a small child

to its chance for bealth and love and laughter, to a good start toAMERICA MUST BE FIRST IN THE AIR

GOODYEAR DEFENSE PRODUCTS HELP "KEEP 'EM

British Service Teams Study American Aircraft

Our evieties industry is examped in a conventive program with the British to improve handling of American flying

O FFICIALS of the British Are tern in the cultury and semant as long Communion achieved-signal that is as as moreovery in master three solutes. of an all allocation in the contractions in the contraction in the con or ore, representational effects

equipment alread-lease-lead program for small tools urged.

margin as combined men cut be sciented

From the "mount of demonstry" comes this Doughts DST absent being uniqueled mean



attain complete supremocy in the sir.

Just as the frontiers of America grow beneath the fiving booves of the mustanes. so today's frontiers of freedom are psueded by North American Mustangs-swift pursuits assed for the hardy strain of American wild senior. These fleet, asile fighters, in active service with the RAF, are beloing Britain







Light Plane Maintenance Lessons about light plane maintenance that

have been learned through the C.P.T. Program. By Bonald C. Bebbys. Clar Mustamus Section

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these difficult sandiffers and that its trolled fight training immediately of their hemyleter and mulfillations as



AIRWORTHY

MANY sirport variors who enjoy watching the bug transport planes "take off" may not be aware of the interesting story of service Before the loapector certifies a transport as ner Board and sirling regulations, the ship has been through the most rigid laspection. Every inch has been enny over by master sircente. mechanics. Controls, landing year, instruments, radio installation and motors bear been in tested by specialists and rechecked by

Preparing an airliner for a flight is today a highly organized, systematic tola-American Airlines, at the New York ter-

sir transportition," says President C. R. Smith of American Airlians, "centres Increasing dereard which will meeting to call for larger faster planes. Meintenance will become more greater skill. It is a vocation for ambitious, intelligent men who have a background of sound technical training." For such men, the future is briefe in

mind alone, employ approximately 1000 men

motors are taken down rebuilt, tested under siaborate controls. Engagering advances are continuously being built into the planes, and

manager ships actually grow better in use.



Servicing Canadian Kinners

Re Charles Sonder



GOV the were broke out the Corn, which are being flows day to and day

Many experimental sawdings, los-

What these doors artually did was to







Egylod winter day at a Genetica testably loss, with Engagewood Floodback Lie on the loss

More Flying Per Day For Airline Planes

Maintenance men are contributing greatly to pational detense because they are making it possible to get more intensive use al cirplones than ever before in history. Airlines have fewer planes there are extually needed, but maintenance crews have speeded. on their methods and by working around the clock are keeping. air transports flying steadily throughout the country. Never before has girline maintenance been more important.























Beginning immediately nature Massare des are mark streke. Meridian



The Birdmen's Perch



IF PAYS TO SE CRITICAL

WHOPPER OF THE HONTH



Gulf Oil Corporation and Gulf Refleins Company . . . makers of GULF AVIATION

PRODUCTS



Mass Maintenance Methods

With 598 men servicing over 256 cirplanes, this story of Chief Eidder's shops is especially noteworthy.





(Time to your first)





















The Northrop "All-Wing"

By John K. Herthree, President Monthesa Assessed, Inc.

If it is not in grouper is a Mexicol in the control of the control



this endy model had movable tell tracteds on ecologic house and but one copies

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ATIATION, Security 201

Airplane

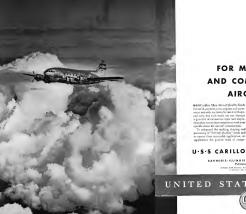












FOR MILITARY AND COMMERCIAL AIRCRAFT

U-5-5 Carillary Allian Aircraft Quality Stocks sens metallarrate and stool molecus with Garmany years' experience in producing fine allow speels for the Automotive, Imanecifications for aircraft communion.

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tries is evidence of our ability to produce

consistently economical fabrication and

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UNITED STATES STEEL



"Teamwork For Production"

By Robert Mource, Director of Functioning, North American Associate, Inc.





There are obvious advantages to the With Entergrant and with other robot submer of president may conductors problem, and there are some perious

SUB - CONTRACTION



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AVIATION December 1887







as being of paramount exportance in

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<u>"Murma-huffmann"</u>



Its noteworthy addresses in which MODMA NOFFMANN has been privileged and becomed to participate by supplying PRECESSON READINGS for the controls of the various North American Aviation models.

receive some pledges its utmost continuing effort to the energency defense activities of North American Aviation, for and of the entire already inflately. As process, identified with the aircraft industry.

more its services days, NOBMA HOPEMANN taken peofic in the Section posterior was serviced by several regions, including a American based or descents, regions, including and a visions equipment (including the U S Government) employs MORMA MOTEMANN PRECEDENT DELASONS. The common one in the seyenth Seld is recognised within reservices of drong, materials and critical members and of their enabliness decomposition.

BALL, POLLER AND TH

NORMA-HOFFMANN BEARINGS CORPH., STAMFORD, CONN., U.S.A. - FOUNDED 1911



ADEL

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"Teamwork" is the Call to Victory

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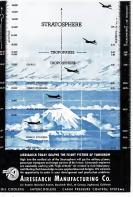
... TO BUILD WITH TEAMWORK



A MERICA CEARS FOR WARE A nation of this man, deficient to proceed a progress, now creates the Arrend life Dynamics and all the design of the characteristic field of the

NAMES OF





BLACK LIGHT
for North American B-25



W IN ABOTTON to Furthship the quinter industry with Right State, Whinter Type Privary Depther, Cashall Bream, and Deep demanders for both siddle and middle light — Streeneds existency at highly address, or productal engineering with saming deely with salinity and delt asturding benchmark as shallow and delt asturding benchmark as shallow and benchmark problems. For Souther Subgranding, and deep For Souther Subgranding, and design

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stigit . . . sikkun gine m niperimalike matrus between innde and studie of plab's compenium. Thus, Entertude gunds regions of frigue : . . belps keep gibt efficiency high. The Type N-905 Lungnath B-25 viliper only T-00 on gund and operation as heat of sate . . . with a militarium of mentionence sharing the long service kit. Bettermic "Both Light" is put unsider example of the sum Stepa.

ELECTRONIC LABORATORIES, INC.

AVIATION - December, 196

"Tennwork is the Call to Victory in the Battle of Production

North American Aviation

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And for year tool coops Thompson country

with THOMPSON in the North American Float as in many other simines plants. Thompson

Orledon are meeting the demands for spreedy output, elevable dependebil. It is under the above of prodition his the request that the true value and full Highy . . . verselle . . . feet . . . Thomson Grinden are a meterial sid at North American in the grinding to close tolerances a wide range of vital airplees parts, quickly, afficiently, at low soul. Saudineties, beliefers and general production belorgetter will be sladle

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we believe we are performing the only



Sub-security week on a line of hardens may parties. This work to your helps such







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California skies these North American AT-6A Advanced Trainers, equipped with Wittel Tyne FR Stainless Steel Hose Clames, wine toward Army Air Corps Training Bases, where they will be used in the final stage of Cadet training.

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27 Tree Mrest Previdence, S. L.



AVIATION, December, 1841



Onsrud Tools and Machines to take more from each hour

to take more from each hour Fer rooting, drilling, shaping, garding, stall ing, and lapping. Owned gives you tooks and suchases for high speed production and simple say control. Tooky 99% of the U. S. sixonfi industry carplays Outrol mechanis.

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ing siz.

From Spar Millers, machining 30 foot wing parts in 10 minutes' tane, so 55 HP Hard. Routers turning at 50,000 RPM, Characl offers high speed tools and machines to take more founded mark from such large.

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HANSEN Push-Tite AIR HOSE COUPLING The farmer Harme Park-Tille sir hose couplings see doing their his in the free production land at the North American Assurion, to plant, where the Yorks of Such prism, water and succession production is being so succession Hanne Paul-Tite six how conplante rane and executedly by the of the leading setuden and leden Ther are quarker, carrier and more economical to operate. A slight path of the play two the notice they are the last they are record at the n.s connected spaceage at SEED NAME OF THE PARTY WASHINGTON ON A POPULAR pall and is disconnected and not in restrictly turned off. Hanney Peak-Tile air base core plients Pent-fire an easily and will greatly increase production.

Helping to Make

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Britain's New "Heavies"



The British turn to the long range, heavy bomber, a type planeered by our Air Corps.—Some comparisons with the Boeing Flying Fortresses.

ENGLAND having come rather shmorrest in brave, long range boxbers, flow double-now \$,500 kg. Wreght Cy-Store is defaulty some executation on slame It's Boston are sequented by Co. Detroit released by the Air Minhey

Berlin, something Hig 6-7,000 lb

tinn Sufe int Sept. 12, the money at 27 h 9 m. Fortrams, weighing to be both down and resonably short.
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which in both bombars, especially the the Navi Agrices find it deficult to

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The PROOF PUDDING

made nomble by the 100% X-Ray realizer and communica-Since that peac. Triplett & Burton have ecousided their

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grachines have been so descried and have been built so each

member that they could more than double the persent vol-

From a then-amounding record of 600 pure per month in 1955, show have advanced the are used new over \$20,000

Metallurgical X-Ray and Gamma Ray analysis, Physical and Electrical testing. Chemical and Spectrographic determination, X-Ray Diffraction, Metallography Heat Tregiment and Foundry Sand testing, High-Speed and Micro-photography, etc. ATIATION, Semanto, 844



Morrow **Plywood Trainer**

ATEST pholie bonded plywroos pram-ow wings in the Namow Victory feature being a hydraudic beake took your santiferer manualate proper-D Rence to 1,000 m., and raced 165 pleaths) on the Pacific Coast, the streework is of Invitated beliebed propwas forced to 2010 by Haward and tions are astudied in two halves. The









Laboratory Control For Ranger Engines

Extensive Laboratory control of materials and methods makes for constant improvement in quality and performonce of Banger Alzaraft Engines.

By Clinton B. F. Hacouley, Washington Editor, Autotion

If it is all remember who a markine power of this as that was not for analy-improvement of design, materials and alog or engon factory was as on or tening Today the laboratory has inclinated. homes, established price of ways much wen group washing and species and plant must, an right next approad dendured policys with ineg helds. Soon, And then to an a should be, for change in the breate Stylkle-fored machinists in group event's hundred offendant for a cost now dead tred to minoritie in the Samper Arrysis highe the scheromets of a series

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New Twin-Engined Trainer

Curtes AT-9 incorporates some general performance and counting characteristics as multi-engined tactical aircraft

NEW true of twen-regime since A fix high speak, multi-engined fighter

to collective entries nomen in the other landings will now transfer shock this make



Aeronca Defender

PCT. Agreema Defender, a new tendor: proting members. Addition of the evermuner, in row in production by one take will resuse complete fundage second Alexandr Corn. Matherests. obour your has be manufact equipment stid to be exceptionally light to operate. or and the the countriable affect of him. Affects should be been decreased and it





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INSTRUMENTS OF VICTORY

The Assert Says, "Do a thing, Do it Rights and be Quick about 4" Let American manufacturers adjust that classes. We have at VARD. And have are three pretraments, first developed for our own use, and now afford to one or pids in doing a job, doing it risks and doing it Opidity. The first of these, so the contex obeys, is a circular dividing mechine. It cocurately divides any discolar

At either side of the divider, in the obare picture, are new YARD external companyon, small bands table interests for the bar last or manufacted as. One is a skel some type. The other is a formal locally work quickly. Adjustments are umple and passing VMD halds retrieve owner for chorism through holes, and theriness Thesera we provide analysis

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MECHANICAL LABORATORY

S. A. E. Engineers Review Year of Greatest Production Progress

Los Angeles meeting sums up achievements of part 12 months.

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Peace by C. F. Millereddy, Assertions, who asserted has did not received Total

OW a trademan event among twis-tion outpresses, the 1941 Amond Air-











to r Codenia Stratus at OFM George



AIR FILTERS for Airplane Engine Protection

This article is of timely interest because of recent emphasis on air filters for all military airplanes. By We. E. Gregory, Division Monoger American Air Fifter Co. Inc. hadanas march resides at their

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Presented at the October meeting of the in normally referred to as "progressive deservoir Secrety of Mechanical Engineery publicg", is to distribute the deal resurb.

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A Procedure Control For Aircraft Welding

By A. K. Sconger, Course.

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Fig. 6. The server employe from her o third even presention the laser case. Vite

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Fig. 7: In the antifoling fitting both the lower sees and outer personal was assorbed. The lease even has a purplish color. Adquessed he is assured from abroad always be made from the sames employee side out from the exhibiting

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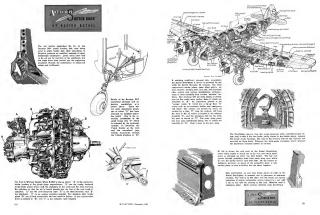
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At so true during writing should



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MECHANICALLY OPERATED SEQUENCE VALVES

Positive and Automatic Control for Sequence of Operations

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Aviation— RADIO

Digiting the Air Waves with Craig Walsh

Dedie Maintenance At Enited Sir Lines

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Aviation's Changing Trends ewech the emitter recording the great-

By Seliz Altschul

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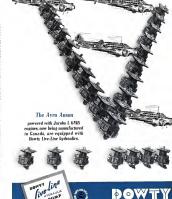
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Bioters Air Leses in recent weeks has

established, first one commune and then evening fast judgment

source power attraction print agg part appropriate V Space at the combination







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BUYER'S LOG BOOK What's New In Accessaries, Materials, Supplies, and Equipment

Religioused wicking has been made commercially available by Promotter

Center eliminator for are welding in amounced by Whiten Welder & Metels on budy of the use welding generator. Cantrol is by means of a 3-position refuse eurons density for limited period, leating new be retracted to make slight

For legh posture installation from 1800 to 2000 ft., the Asherett Power Create New Fire Wall Stude, made by Presphit Engineering Co., 2000 Changua Ave.

The new defense malerial, Asserbed Symbolic Enther, has been recommisty compounded in the Inhoragonan of Miller Stather Co. Jan. Alexan Obio. on



Progressive religenced welding salt





Niller melded Asserbed perio



Stabl. Both both, exhaulting motion for (a-third at the part, Cold. Sale market Stable 2 tons, names the first of SPEED





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in factory, hogger and reriefel, service these at mrparts. "Chirks" are gas-powered, espable of 24 hr. SATING CHEEK, MICHIGAN THE SPRINGERS PLACE

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in production in servicing in operation



JINIL LII AIRGRAFT HYDRAULIG SYSTEMS WITH GENERAL CONTROLS AIRGRAFT TYPE FLEGTRIC WAVES

GENERAL GONTROLS WOLTH-POISEO AMCKATT TYPE ELECTRIC TAILY FE

CONTROLS

ACTUAL PRINCE

ACTUAL PRIN



GENERAL CONTROLS

AMERICA ROARS ahead on SHELL

I SEPROVED designs, now and better meterials, increasingly rapid strides in the occunuational scenaries, here made possible the super-appeals of

OPEL ANNION CATOLINES ... ARRESTELL OF











Enter Projection Spot Walder A VIATION: Security: 314 Designed predictionly the should present to a stream by the Japane D. C., and the Book J. J. C. Come GOO Come Blanks in a new came confidence of the same of the same control of the same confidence of the sa

To step as prediction on small-bid driffier and toping operation, a new series of tem, there and low quinted fielding machines tree ben introduced by scholar Perez Co., Schomenou, Steb. Deliter break secreptures well-known had having outputed fording drifter formers in all Arias bears, prefer present. Talks weight at the three and law-speakly scalarse in spread at 25° Bs, Scrutzling a stiff apport for mooth moments of hower joes, formers and such in previous quantities. Each drifting had a equipped with own motor mounting and one type of publishing extent with content bounds. Talks curries C Just 4-speakle.

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ATLATION, December, 1942

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Unother CURTISS MILESTONE The New Curtiss Columbus Plant Adds Its Production Might to the Notion's Befores Effort

. The dedication of the new Cartina Columbus plant on December 4 forces another strong link in the country's Doferna Effort

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THE AIRCRAFT INDUSTRY ADOPTS H-P-M Fastraverse Blankholder Presses FOR DEEP METAL DRAWING *



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You've watched your son's interest in eviction grow from early childhood. You've seen him build model alrelance, watched him pare over axisting magazines. The day he told you, "I went to learn how to fir." you understood

You know that he loved fiving just as your suighbor's see loved law, journalism or medicine. You know that each would find adventure and success in the field he laved, that each would have to study hard to mester the confession he chose. You know that gription was the most sensational develanners of majors fines, that it was constantly expanding and would array to undercomed at proportions after the user. This is why you realized that your coal's changes for success were present in mintion then in new other field

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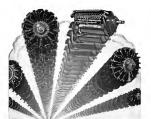
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The use of magnesium cliops in the extraded locus is programming requirily. In compleme construction, for example, such parts include extraded sections of nowments," for sects, panel stiffeners, fillers, vortous cabin parts and for canopy humans, such as the cockett conopy for the Vulter Busic Trainer ST-13A. shown above

DOWNERSE, unique on a weight-serving metal. Technical data is available Dow invites convultations.

Bowerte; retroited and do cost purk are used to arranged amounted and the real periods are used for the cockyll convey of the False State Testion ST 124. A CITATION OF USEFULNESS is an exercision on Dane that manufacture in province made

THE DOW CHEMICAL COMPA New York City, St. Lavie Chicopy, See Freeziste.



